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EXAMINER	
GORDON, CARLENE MICHELLE	
ART UNIT	**PAPER NUMBER**
2124	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/086,939	ZORC, SAMO	
	Examiner	Art Unit	
	Carlene Gordon	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *28 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This application is responsive to application filed on February 28, 2002. Claims 1-30 are pending in the application.

Specification

2. The disclosure is objected to because it contains several embedded hyperlinks and/or other forms of browser-executable code. Applicant is required to delete the embedded hyperlinks and/or other forms of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> **The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.**

4. Claims 2, 5, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 2 recites the limitation "the second in-memory *definition* of the source code" in lines 14-15. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 5 recites the limitation "the schema object tree" in line 3. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 15 is unclear as to which *method generates a communication API based on an XML schema definition,* given the claim is improper as it depends from claim 16, which is numbered to follow claim 15, however preceding, which is not allowed. Furthermore, claim 15 is removed from prosecution, as the scope is indefinite.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-4, 6, 11-12, 17, and 22-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Saulpaugh et al (USPN 6,792,466), hereafter "Saulpaugh".

10. As to claim 1, Saulpaugh discloses:

a) receiving the mark-up language message definition (i.e. col. 7 lines 36-42 "receives... messages", "messages... XML");

b) generating a first in-memory representation of the message definition based on the received message definition (i.e. col. 17 lines 7-9, "XML Schema"); and

c) generating a second in-memory representation of source code based on the first in-memory representation of the message definition (i.e. col. 17 line 10 "code.. pre-generated for categories") .

11. As to claim 2, Saulpaugh discloses:

d) generating source files based on the second in-memory definition of the source code (i.e. col. 17 "code generated from an XML Schema").

12. As to claim 3, Saulpaugh discloses:

the first in-memory representation is a schema object tree corresponding to an XML Schema message definition; wherein the schema object tree includes one or more nodes (i.e. col. 41 lines 46-60 "tree... service advertised", "service advertisement matching a particular XML schema").

13. As to claim 4, Saulpaugh discloses:

the second in-memory representation includes one of class members, class methods, source file object nodes, class object nodes, and source file comment object nodes (i.e. col. 17 line 10 "code.. pre-generated for categories (or classes)") .

14. As to claim 6, Saulpaugh discloses:

The method of claim 2 wherein the second in-memory representation includes elements and attributes; wherein the step of generating source files based on the second in-memory representation of the source code includes the step of writing the elements and the attributes into respective Java class source files (i.e. col. 17 lines "generated code").

15. As to claim 11:

Rejection of claim 1 is incorporated and further see discussion of claim 1.

16. As to claim 12:

Rejection of claim 1 is incorporated and further see discussion of claims 1 and 3.

17. As to claim 17, Saulpaugh discloses:

a) a first module for receiving a message definition and based thereon for generating a first in memory data structure that corresponds to the message definition (i.e. col. 7 lines 36-42 "receives... messages", "messages... XML"; i.e. col. 17 lines 7-9, "XML Schema"); and

b) a second module for receiving the first data structure and based thereon for generating a second in memory data structure that corresponds to source code for manipulating at least one mark-up language message (i.e. col. 17 line 10 "code.. pre-generated for categories").

18. As to claim 22, Saulpaugh discloses:

a) receiving a schema definition for a mark-up language message (i.e. col. 7 lines 36-42 "receives... messages", "messages... XML"; i.e. col. 17 lines 7-9, "XML Schema");

b) generating a first in-memory representation of the schema definition based on the schema definition (i.e. col. 17 lines 7-9, "XML Schema");

c) generating a second in-memory representation of source code based on the first in-memory representation of the schema definition; wherein the step of generating a second in-memory representation of source code based on the first in-memory representation of the schema definition includes performing one of context free processing and context sensitive processing (i.e. col. 17 line 10 "code.. pre-generated for categories").

19. As to claim 23:

Rejection of claim 22 is incorporated and further Saulpaugh discloses generating one or more source code files based on the second in-memory representation of source code (i.e. col. 17 line 10 "code.. pre-generated for categories"; i.e. col. 2 lines 30-44 "Java code").

20. As to claim 24:

Rejection of claim 22 is incorporated and further Saulpaugh discloses reading a portion of a schema definition that corresponds to one or an element or an attribute from

a schema definition file (i.e. col. 33 lines 19-26 " XML... arranged elements", "attributes"; col. 40 lines 21-32 "...XML schema");

constructing a schema object hierarchy based on the read portion (i.e. cols. 33 - 40 lines 21-32 "...XML schema"); and

compiling the object hierarchy into a source object hierarchy (Fig. 12 "schema 154 may be compiled"); and

writing the source object hierarchy to one or more object-oriented source files (i.e. col. 2 lines 30-44 "Java code").

21. As to claim 25:

Rejection of claim 24 is incorporated and further Saulpaugh discloses schema object hierarchy includes a plurality of objects; wherein each object includes code to compile itself into a source code primitive (Fig. 12 "schema 154 may be compiled").

22. As to claim 26:

Rejection of claim 24 is incorporated and further Saulpaugh discloses source object hierarchy includes a special set of objects that represent a predetermined class source file and that has a predetermined number of members, methods and definitions (cols. 81-82 "Java objects may include code (the object's methods)...").

23. As to claim 27:

Rejection of claim 24 is incorporated and further Saulpaugh discloses source

object hierarchy includes an object corresponding to a whole source file, an object corresponding to a file declaration comment, an object corresponding to a package name, an object corresponding to import statements, and object corresponding to class definitions (i.e. col. 43 lines 54-61 "Java class"; col. 2 lines 30-44 "Java code").

24. As to claim 28:

Rejection of claim 27 is incorporated and further Saulpaugh discloses the object for class definition includes one of an object corresponding to declaration statement, an object corresponding to specific class member definition, and an object corresponding to method definition (i.e. cols. 43-44 "Java class (XML types)...", "Types... defined in XML... usable in Java... object oriented language").

25. As to claim 29:

Rejection of claim 24 is incorporated and further Saulpaugh discloses wherein each source object is programmed to write itself into a respective source file (i.e. Fig. 12 "schema 154 may be compiled"; col. 2 lines 30-44 "Java code").

26. As to claim 30:

Rejection of claim 29 is incorporated and further Saulpaugh discloses wherein each source object includes a toString( )method that recursively calls toString( ) method of its descendents to write itself into a respective source file (cols 77-78 "Using the string structures with the recursive processing...").

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

28. Claims 5, 13-14, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saulpaugh, as applied to claims 2, 17 above, and in further view of Hayes-Roth (USPN 6,031, 549), hereafter "**Hayes**".

29. As to claim 5, rejection of claim 2 is incorporated and further Saulpaugh does not explicitly disclose:

the step of generating the second in-memory representation of source code based on the in-memory representation of the message definition includes the step of generating a source object tree by employing a blackboard architecture that includes agents and solutions; wherein the source object tree includes one or more nodes; and wherein the nodes of the schema object tree are agents and the nodes of the source object tree are the solutions. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the nodes to the source object tree represented by the pre-generated code of Saulpaugh are solutions.

However, Hayes discloses a blackboard architecture that can be employed with tree structure, also teaching agents (i.e. col. 36, line 50, "A Blackboard architecture for Control", col. 7 lines 25-50).

At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to combine the analogous art of Saulpaugh and Hayes employing a tree representation. The motivation would have been to provide a Blackboard Architecture for control and agents acting as nodes of the tree of Saulpaugh for improvising a course of behavior as defined by the XML Schema of Saulpaugh (col. 7 lines 25-50).

30. As to claim 13:

Rejection of claim 2 is incorporated and further see discussion of claims 1 and 2.

31. As to claim 14:

Rejection of claim 2 is incorporated and further see discussion of claims 1 and 2.

32. As to claim 18:

Rejection of claim 17 is incorporated and further see discussion of claim 5.

33. As to claim 19:

Rejection of claim 17 is incorporated and further see discussion of claim 18.

34. As to claim 20:

Rejection of claim 17 is incorporated and further Saulpaugh teaches wherein the source code includes Java class source files (i.e. col. 2 lines 30-44 "Java code").

35. As to claim 21:

Rejection of claim 17 is incorporated and further Saulpaugh teaches wherein the mark-up language message is an XML mark-up language message (i.e. col. 7 lines 36-42 "receives... messages", "messages... XML").

36. Claims 7-10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saulpaugh and Hayes as applied to claims 1 and 5 above, and further in view of Coden et al. (USPN 6,341,277), hereafter "**Cohen**".

37. As to claim 7:

Rejection of claim 5 is incorporated and further Saulpaugh and Hayes do not explicitly the step of performing context sensitive compilation while generating each node of the source object tree.

However, Coden does disclose performing context sensitive operation involving tree structures (i.e. Figs. 3-18 "Query objects....", "postfix", "infix").

At the time of the applicant's invention, one of ordinary skill in the art would have been motivated to combine the analogous art of Saulpaugh, Hayes, and Coden employing a tree representation. The motivation would have been to provide

compilation of Saulpaugh in view of Hayes that is context sensitive for performance optimization (see col. 1 lines 60-67).

38. As to claims 8-10:

Rejection of claim 7 is incorporated and further see discussion of claim 7.

39. As to claim 16:

Rejection of claim 1 is incorporated and further see discussion of claim 7.

Conclusion

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yemini et al. (USPN 6,249,755).

Altschuler et al. (USPN 6,778,971).

Vedula et al. (USPN 6,823,495).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlene Gordon whose telephone number is (571) 272-3722. The examiner can normally be reached on Mon.-Fri. 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.G. /C.S.

ANIL KHATRI
PRIMARY EXAMINER